Texting with Toll-Free Numbers

Old-School Market Failure Plagues a New-Age Market

Executive Summary

Texting to Toll-Free Numbers is an Important Market

Text messaging is one of the most prolific forms of electronic communications in the world today. In 2015, more than two *trillion* text messages (SMS/MMS) were exchanged in the U.S. alone.[1] Convenience and efficiency drive this enormous demand for text messaging, and demand drives innovation for messaging applications. Texting is not just for mobile-to-mobile customers anymore.

Today, consumers can use texting applications not only with their wireless devices and computers, but also with more conventional landline telephone numbers, including Toll-Free numbers (*e.g.,* 800, 888 numbers). As text messaging evolves from a predominately personal communications medium to an effective commercial tool, businesses are beginning to "text enable" the same Toll-Free numbers they have spent years, and substantial monies, advertising for their customers' use (*e.g.*, 1-800 Flowers or 1-800 I-FLY-SWA).

Proliferation of Commercial Text-Messaging[2]	
60%	percentage of mobile wireless users in the U.S. that prefer communicating with customer service via text
85%	percentage of customers that prefer to receive text messages from businesses compared to a voice call or email
64%	percentage of consumers that are likely to have a positive perception of a company that offers texting as a service channel
97%	percentage of businesses using text-enabled toll free numbers found that communicating with customers was more efficient using text messaging

The benefits of text-enabled Toll-Free numbers are as numerous as the companies vying to serve the marketplace. Toll-Free numbers spur commerce, and providing Toll-Free subscribers with new and innovative ways to interact with their customers and vendors via text messages will become big business.

[1] Short Message Service (SMS) and Multimedia Messaging Service (MMS). Texting volumes taken from *CTIA's Annual Survey Report for Year-End 2015.*

[2] All data taken from AT&T's *Business Texting Market Survey* (available at: https://www.business.att.com/content/whitepaper/business-texting-market-survey-report.pdf) and *Texting statistics that prove that businesses need to start texting – Market Survey Report*, available at: https://onereach.com/blog/45-texting-statistics-that-prove-businesses-need-to-start-taking-sms-seriously/.

Every air traveler is familiar with the frustration involved in a cancelled flight. You call your airline, wait on hold, and then eventually speak with a customer service representative – oftentimes while in a crowded and noisy airport. Texting with Toll-Free numbers can make this process notably simpler (and less stressful): simply respond to a text message sent from your airline via its trusted 1-800 number and reschedule via a return-text. Likewise, did you just remember that today is your significant other's birthday? Send a text message with all necessary information to 1-800-Flowers to have a bouquet of flowers delivered with minimal time and effort. These are just a few examples of the virtually countless ways that texting with Toll-Free numbers can make doing business easier.

Proliferation of Commercial Text-Messaging[2]	
300%	growth in business texting in 2015
85%	percentage of customer relationships that are expected to be managed without speaking to a human agent by 2020

Text-to-Toll-Free Suffers from Market Failure

The marketplace for mobile-to-mobile texting is relatively mature and the commercial relationships between market participants have worked well for a number of years. As a result, text messages flow between mobile devices, even when served by different wireless carriers, almost seamlessly and consumers enjoy the benefits of inexpensive texting – even at high volumes. *Unfortunately, the same cannot be said for the Text-to-Toll-Free (TTF) market.*

The TTF market suffers from many of the same monopoly characteristics and resulting market failures (both technical and financial) that plagued traditional voice communications for many years and has required relatively constant oversight by the Federal Communications Commission (FCC).

When a mobile customer sends a text to another mobile customer using a different wireless carrier, the text is routed through one of a number of neutral, third-party exchange providers (or aggregators). These aggregators provide the wireless companies

with neutral points of interconnection for purposes of exchanging text messages with all other wireless carriers.

The system works well, in part, because: (a) market participants can choose amongst multiple aggregators to use as their trusted exchange partner, and (b) the economics of the market are well established such that the party sending the text message is typically required to pay a small fee to the aggregator. The market does not work the same way for texts sent to Toll-Free numbers.

In 2014, the five largest U.S. mobile carriers, who serve virtually 100%[3] of the wireless market, contracted with a single aggregator – Zipwhip, Inc. – for text messages involving Toll-Free numbers.[4]

Under these arrangements, it appears the mobile wireless carriers agreed to send all texts destined for Toll-Free numbers ("mobile-originated" texts) through their chosen aggregator.[5] The mobile wireless carriers also agreed to accept texts from Toll-Free numbers (referred to as "Toll-Free originated" texts) only from Zipwhip.

These arrangements, in effect, created a *de facto* monopoly provider for Toll-Free texts to or from roughly 100% of the nation's mobile wireless subscribers. What followed is text-book monopoly behavior – *i.e.*, higher prices, less innovation, and anticompetitive business practices aimed at leveraging monopoly status to the benefit of the mobile wireless carriers and their chosen Toll-Free aggregator.

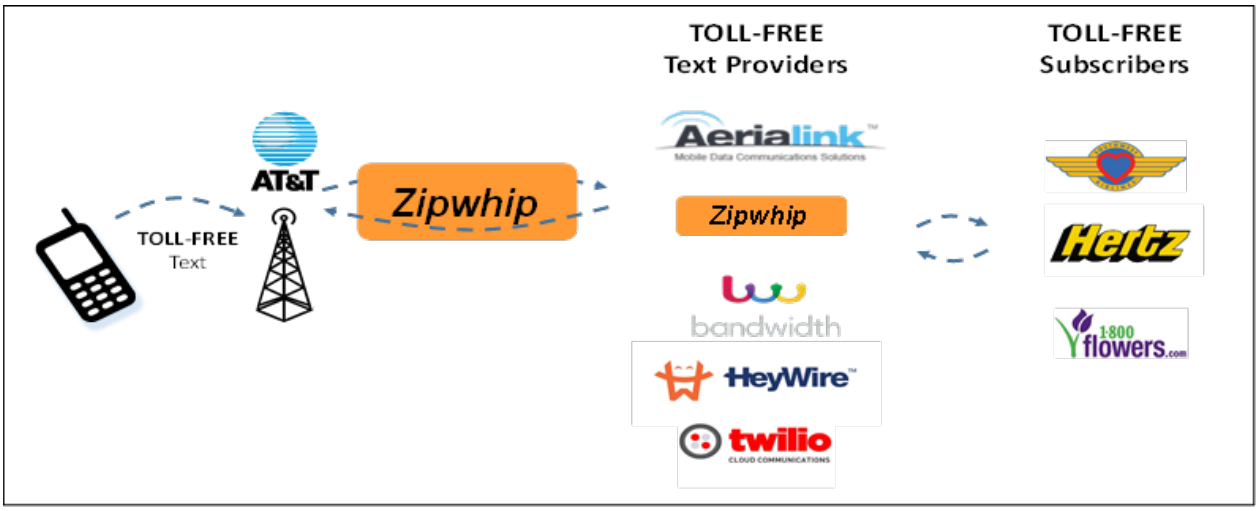
	verizon	AT&T	T-Mobile	Sprint	U.S. Cellular	TOTAL
Millions of Connections	136.6	123.9	58.9	57.7	4.8	382.3
Market Share (Connections)	35.7%	32.4%	15.4%	15.0%	1.2%	99.7%
Billions in Revenue	$72.6	$61.0	$22.3	$27.9	$3.3	$187.7
Market Share (Revenue)	38.7%	32.5%	11.9%	14.9%	1.8%	99.8%

Source: FCC Wireless Competition Report, WT Docket No. 15-125, released 12/23/2015; Connections as of 06/30/2015, Table II.B.1; Revenues for YE2014, Tables II.C.1 and II.C.2.

[3] FCC Eighteenth Report, WT Docket No. 15-125, DA 15-1487 (released December 23, 2015), p. 15. Individual statistics are current as of Q2 2016, taken from *How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q2 2016: The Top 7 Carriers*, Fierce Telecom, August 15, 2016: http://www.fiercewireless.com/wireless/how-verizon-at-t-t-mobile-sprint-and-more-stacked-up-q2-2016-top-7-carriers. Market share statistics assume 410 million total wireless subscribers.

[4] *See* Somos April 26, 2016 Notice of *Ex Parte* meeting in WT Docket No.08-7, claiming the five largest carriers struck deals requiring text messages to and from Toll-Free numbers be routed through Zipwhip.

[5] *See* Zipwhip May 26, 2016 *ex parte* to the FCC in WT Docket No. 08-7. *See also* Twilio May 2, 2016 Notice of *Ex Parte* Meeting in WT Docket No. 08-7 indicating that Verizon, AT&T, T-Mobile, USCC blocked the Toll-Free number ranges and re-routed SMS to a single Toll-Free aggregator thereby forcing OTT providers into commercial agreements with Zipwhip.



Increased Prices

Inter-carrier compensation rates for Toll-Free texts have increased by at least *three times* following the mobile wireless carriers' decision to funnel Toll-Free texts through a single aggregator. Some market participants report price increases as high as *ten-fold*.[6] Furthermore, rather than adhering to the traditional "calling party pays" system, Over-the-Top (OTT) text messaging providers indicate that Zipwhip now charges them for *both sending and receiving texts to Toll-Free numbers*.

It has been reported that termination rates in the *non-Toll-Free* text message marketplace (a market not dominated by a single aggregator) average between $0.0015 to $0.0020 per text. With notable volume, mobile-to-mobile fees may be as low as $0.0005 per text. For Toll-Free texts that must pass through a single aggregator, however, all indications are that carriers may pay as much as $0.006 or more every time they send *and* receive a Toll-Free text – resulting in fees more than 10 times higher than the same texts sent from one mobile subscriber to another.

Stifling Innovation and Hindering Market Development

Since all texts to or from Toll-Free numbers pass through the mobile wireless carriers' single aggregator, that aggregator decides what messaging applications are available to Toll-Free subscribers. To the extent the aggregator does not support a particular functionality or chooses to arbitrarily deem a lawful text messaging application as "spam," it can force the entire Toll-Free texting ecosystem to adhere to these same limitations by simply blocking "non-compliant" traffic. Further, the security protocols and business practices of the *de facto* monopoly become the "lowest common denominator" for the Toll-Free texting marketplace.

[6] Industry stakeholders report that actual contracted terms are highly confidential and protected, at Zipwhip's request, by nondisclosure agreements.

In 2014, CTIA (f/k/a Cellular Telephone Industries Association) adopted SMS Interoperability Guidelines. Those guidelines include rules related to TTF, including who may authorize a Toll-Free number to be text-enabled.[7] Those same guidelines require the use of a neutral, third-party registry which would maintain active information about the texting capabilities (and requisite authorizing party) for Toll-Free numbers.

The CTIA guidelines were intended to bring order and uniformity to the Toll-Free texting marketplace. Unfortunately, Zipwhip does not comply with these guidelines and, to date, its five major wireless carrier partners have not enforced the guidelines, even though they are core members of CTIA. As described herein, ignoring these important industry guidelines has real world implications: i.e., Toll-Free numbers are text-enabled without the knowledge or consent of the Toll-Free subscriber (or the carrier who has been assigned the Toll-Free number) resulting in significant confusion about who controls a Toll-Free number.

In this paper we describe a simple exercise we undertook to test the veracity of existing Toll-Free texting protocols. With little effort, we were able to duplicate a scenario in which the single, CTIA-recommended neutral registry is bypassed, thereby, allowing Toll-Free numbers to be text-enabled without the authorized subscriber's knowledge or the supporting voice carrier's concurrence. Likewise, we were able to intercept text messages destined to the Toll-Free numbers we enabled without the authorized subscriber's consent. The ramifications of those results should be troubling for anyone who subscribes to a Toll-Free number, whether they intend to text-enable that number or not (because someone else may text-enable it for them). We employed the same test with carriers known to rely upon the neutral, third-party registry described in the CTIA guidelines. In each of those circumstances, we were prevented from text-enabling Toll-Free numbers for which we did not provide proper authorization.

While the risks above are obvious for subscribers and carriers currently operating in the texting to Toll-Free marketplace, other less obvious distortions may be equally harmful. The largest potential risk to the Toll-Free market may be the fact that large, sophisticated companies are simply avoiding the market until the existing distortions are resolved. This robs consumers of choice and other benefits of a more robust competitive marketplace.

We spoke with one of the world's most innovative companies that manages millions of landline phone numbers. All landline phone numbers are text-enabled when it first acquires them – *except for its Toll-Free numbers*. Though it manages a large inventory of Toll-Free numbers, it currently sits on the sidelines of the growing text-to-Toll-Free marketplace. The types of problems described above, *i.e.*, a single bottleneck aggregator and substantially increased exchange fees, do not foster the

[7] *SMS Interoperability Guidelines*, Version 3.2.2 (Effective January 1, 2015), Section 4.4.3.

type of marketplace wherein it believes it can sufficiently guarantee the quality and value of its products.

Anticompetitive Behavior

Zipwhip not only serves as the sole "gatekeeper" through which OTT messaging providers must pass to reach mobile wireless carriers, it also competes directly with those same OTT messaging providers in the retail market for texting to Toll-Free. As a result, each time a Toll-Free text message from an OTT provider is blocked, prices to terminate a Toll-Free text increase, or a Toll-Free text function or feature goes unsupported, Zipwhip benefits *vis-à-vis* its retail competitors. And, the potential for anticompetitive conduct doesn't stop there.

Because Zipwhip serves as the *de facto* gatekeeper for all Toll-Free texts, it occupies a position in the ecosystem that allows it to collect information about the customers of its competitors and use that information for marketing purposes. These concerns are not hypothetical. As explained herein, numerous examples exist where competing Toll-Free texting providers have had their texts blocked, their Toll-Free numbers text-enabled without their knowledge or consent, and their customers solicited by Zipwhip using sensitive information available to it simply as a result of its relationship with the five largest mobile carriers.

Revenue Sharing

Why would the five largest mobile carriers in the U.S choose a small, relatively unknown company to manage 100% of the TTF traffic to/from their subscribers? Perhaps more importantly, why do the mobile carriers perpetuate this arrangement in the face of growing complaints related to anti-competitive behavior and price gouging? *Not surprisingly, the answer is: "money."*

Zipwhip has substantially increased the prices it charges companies that are working with businesses to "text enable" their Toll-Free numbers. Zipwhip charges those companies up to 10 times more today to exchange a Toll-Free text through Zipwhip, compared to rates those companies paid before Zipwhip was installed as the exclusive aggregator. Zipwhip shares a portion of those increased charges with the mobile carriers.[8] This practice is referred to in the industry as "revenue sharing."

Contracts between the mobile carriers and Zipwhip are not publicly-available, but it is clear that a critical aspect of those contracts includes a revenue sharing arrangement.[9] For each Toll-Free text message Zipwhip processes and the mobile carrier sends or receives, Zipwhip collects its higher fees and "kicks" a certain amount of those fees back to the mobile carrier. Because Toll-Free numbers are not generally assigned to mobile companies, their relationship with Zipwhip allows them to monetize Toll-Free texts without increasing their costs by exploiting

[8] *See e.g.*, Twilio, Inc. *Petition*, WT Docket No. 08-7 (08/28/15),p. 8, pp. 19-20.

[9] *Id*.

their dominant market position in the mobile space. The parties that end up paying more (and getting less) are Toll-Free text providers and, ultimately, Toll-Free subscribers.

The FCC has already determined that "revenue sharing" arrangements of this type can lead to market distortion when one or more market participants exercise unilateral market power. In its seminal 2011 decision, the FCC determined that revenue sharing agreements in the voice marketplace were causing major market distortions leading to billions of dollars of "over-charges" to long distance companies and inefficient use of the network (a practice the FCC referred to as "arbitrage").[10] As a result, the FCC substantially reduced those fees – in some cases from more than $0.08 per minute, to roughly $0.003 per minute – a reduction of more than 90%.

All indications are that the market-distorting impact of Zipwhip's revenue sharing agreements with the major mobile companies may be even more dramatic than those addressed by the FCC in the voice market.

AT&T, Verizon and Sprint were primary advocates demanding heavy-handed regulations when revenue sharing was discovered in the voice market. However, As the analysis below demonstrates, when equated on a network capacity basis, Toll-Free text providers appear to pay Zipwhip roughly *5,000 times more* than AT&T and Verizon pay to terminate voice calls. Even before the FCC acted to reduce inter-carrier

Texting-to-Toll-Free ("TTF") fees dwarf equivalent voice-related fees set by the FCC for revenue sharing arrangements	
3,000	the approximate number of text messages that use network capacity equivalent to 1 minute of a voice conversation
$0.005	estimated average fee TTF providers pay to Zipwhip to send and/or receive toll-free text messages to/from one of the 5 largest mobile carriers
$15.00	calculated fee TTF providers pay for the equivalent of 1 minute of voice communication (3,000 x $0.005)
$0.08	approximate fees AT&T, Verizon Sprint and other long distance carriers were charged per minute of voice conversation BEFORE the FCC implemented revenue sharing rules
97%	estimated amount by which FCC revenue sharing rules reduced fees paid by AT&T, Verizon, Sprint and other long distance carriers in revenue sharing situations
$0.003	approximate fees AT&T, Verizon Sprint and other long distance carriers were charged per minute of voice conversation AFTER the FCC implemented revenue sharing rules
5,000 x	the multiple TTF providers currently pay to Zipwhip (who shares those fees with its mobile provider partners) compared to what AT&T, Verizon, and Sprint pay per 1 minute of use AFTER the FCC's revenue sharing rules are implemented

[10] *In the Matter of Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663, 17874-90, (Nov. 18, 2011), hereafter "*Revenue Sharing Order*." *See* Section XI.

compensation in the voice market based on AT&T and Verizon's complaints about being gouged, they still paid roughly *190 times less* than Toll-Free text providers are paying to Zipwhip today on an equivalent capacity basis.

Even at those much lower, relative rates, both Verizon and AT&T were adamant that revenue sharing arrangements were to blame for excess profits and unreasonable prices. Both companies argued that revenue sharing agreements should be heavily regulated. According to Verizon:[11]

> *"Carriers are not entitled to windfall profits that flow from excessive intercarrier compensation charges. And, there is no better evidence that access rates are excessive than a [competitor's] agreement to share revenues with a business partner…"*

Indeed, Verizon was so convinced that revenue-sharing agreements were destructive to the competitive market, that it requested the FCC prohibit them entirely:[12]

> *"Verizon still favors a declaratory ruling prohibiting carriers from assessing intercarrier compensation charges on traffic subject to a revenue sharing agreement."*

AT&T agreed in more direct terms:

> *"Revenue sharing is unjust and unreasonable."*[13]

> *"Based on public interest harms…it would be appropriate for the Commission to issue a rule declaring that any LEC [local; exchange carrier] access revenue revenue sharing agreement…is prohibited."*[14]

Based, in part, on these passionate appeals from AT&T and Verizon, the FCC acted to substantially reduce inter-carrier fees when a revenue sharing agreement existed. Yet, less than three years later (2014), both AT&T and Verizon appear to have entered into exactly the same type of revenue sharing agreement with Zipwhip for purposes of enjoying increased fees (and what clearly appear to be windfall profits) from TTF providers.

Ironically, in the voice market, both AT&T and Verizon refused to pay millions of dollars in what they saw as unreasonable intercarrier charges arising from revenue sharing agreements. They were successful in this regard because their competitors were prohibited by FCC rules from blocking their traffic and subsequently disrupting their business. Yet, in this circumstance, no such FCC rules prohibit AT&T and Verizon (or Sprint, T-Mobile, etc.) from blocking text messages from messaging companies who refuse to pay for the same reason. Indeed, as described herein, the carriers, often in combination with Zipwhip, do exactly that.

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[11] Verizon *Comments*, FCC Docket No. CC 01-92 (04/01/11).

[12] *Id*.

[13] AT&T *ex parte*, CC Docket No. 01-92 (09/16/10). *See also* AT&T *Comments* (4/01/11) and *Reply Comments* (04/18/11).

[14] *Id*.

The Health of the Market

- ✓ **Prices 190x to 5,000x more than those found in nearly identical markets**
- ✓ **A single non-neutral "gatekeeper" through which all TTF traffic must flow**
- ✓ **Verifiable complaints of anti-competitive behavior**
- ✓ **Sophisticated suppliers sitting on the sidelines**

Individually, each of these characteristics brings into question the health of the TTF marketplace. When combined, they speak clearly to a distorted market. However, when also viewed with the knowledge that the handful of mobile wireless carriers controlling nearly 100% of the country's wireless subscribers profit directly from the distortions – a more troublesome picture develops. This exploratory paper analyzes these various relationships and evaluates the market distortions that result with the hope that a clearer picture of the market failure may result in meaningful discussions toward increased competition, innovation and consumer welfare.